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# First record of *Sclerocarpus africanus* Jacq. (Asteraceae, Heliantheae) for South America

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**Abstract:** *Sclerocarpus*, a genus belonging to subtribe Helianthinae (Asteraceae, Heliantheae), is recognized by the pales surrounding its ovary and sometimes part of the corolla and becoming thickened and hardened at maturity, usually developing tubercles on the surface. The genus comprises eight species from which seven are American mainly distributed in Mexico and Central America. This work provides the first register of the genus for South America, by recording *Sclerocarpus africanus* in the Bahia state, northeast of Brazil. The results include description and illustration for the species.

**Key words:** Compositae; Helianthinae; northeast Brazil; Bahia state

The tribe Heliantheae (Asteraceae) is represented by ca. 113 genera and 1,461 species and occurs mostly in the New World, especially in Mexico, Central America and South America (Panero and Funk 2002; Baldwin 2009). Currently the tribe comprises 14 subtribes, in which Helianthinae, composed of 19 genera and 357 species, is the second most diverse (Panero 2007). Helianthinae is characterized by ray flowers sterile, single stigmatic surfaces in the style branches of the disc flowers, ducts outside of the veins in the styles, resin yellowish and cypsela striated, compressed (Robinson 1981). In Brazil, the subtribe is represented by five genera and 39 species (BFG 2015).

*Sclerocarpus* comprises eight species of which seven are American, mainly distributed in Mexico and Central America; *Sclerocarpus africanus* Jacq. is the only species native to Africa (Feddema 1972). The genus is recognized by each pale surrounding its ovary and sometimes part of the corolla and becoming thickened, hardened at maturity, usually developing tubercles on the surface. The cypsela and its hardened paleaceous structure constitute a dispersion unit called 'sclerocarp', which means 'hard fruit' in Greek (Villaseñor and Hinojosa-Espinosa 2011).

This work provides the first record of the genus for South America, by recording *Sclerocarpus africanus* in Bahia state, northeastern Brazil.

The species was identified by specialized literature (Panero 2007; Villaseñor and Hinojosa-Espinosa 2011), as well as consulting type specimens.

During taxonomic studies on the tribe Heliantheae from Bahia state, we revised the most important reference collections of the Asteraceae for Brazil at ALCB, BHCB, CEPEC, EAC, HB, HRB, HUEFS, OUPR, PAMG, R, RB, SP, SPF and UEC (acronyms according to Thiers 2016).

Distribution of the *Sclerocarpus africanus* is presented with municipal limits, and the map was generated using ArcGIS software (ESRI 2010).

***Sclerocarpus africanus*** Jacq. (Jacquin 1781: 17; pl. 176). Figures 1–8.

Shrub ca. 0.5 m tall. Branches cylindrical, striated, setose to glabrescent. Leaves alternate, trinervate, petiole 0.5–2.5 cm long, leaf blade 4.2–6.8 × 2.4–3.2 cm, chartaceous, discolor, elliptic to ovate, apex acuminate, margin crenate to serrate, base attenuate to decurrent, adaxial strigose and abaxial setose surfaces. Heads terminal, peduncle 2.2–13.4 cm long; head 12.9–13.8 cm long; phyllaries two types, similar to leaves 16–56 × 9–16 mm spatulate to ovate, strigose, and 2.8–4.2 × 1–1.4 mm, ovate, adaxial strigose and abaxial setose surfaces, apex acute to acuminate, margin entire to crenate, green. Receptacle paleaceous, paleae 7–9 × 4–5 mm, obovate, persistent, surrounding the ovary and sometimes part of the corolla and thickened, hardened at maturity, usually developing tubercles on the surface, apex acuminate, sometimes erose, margin

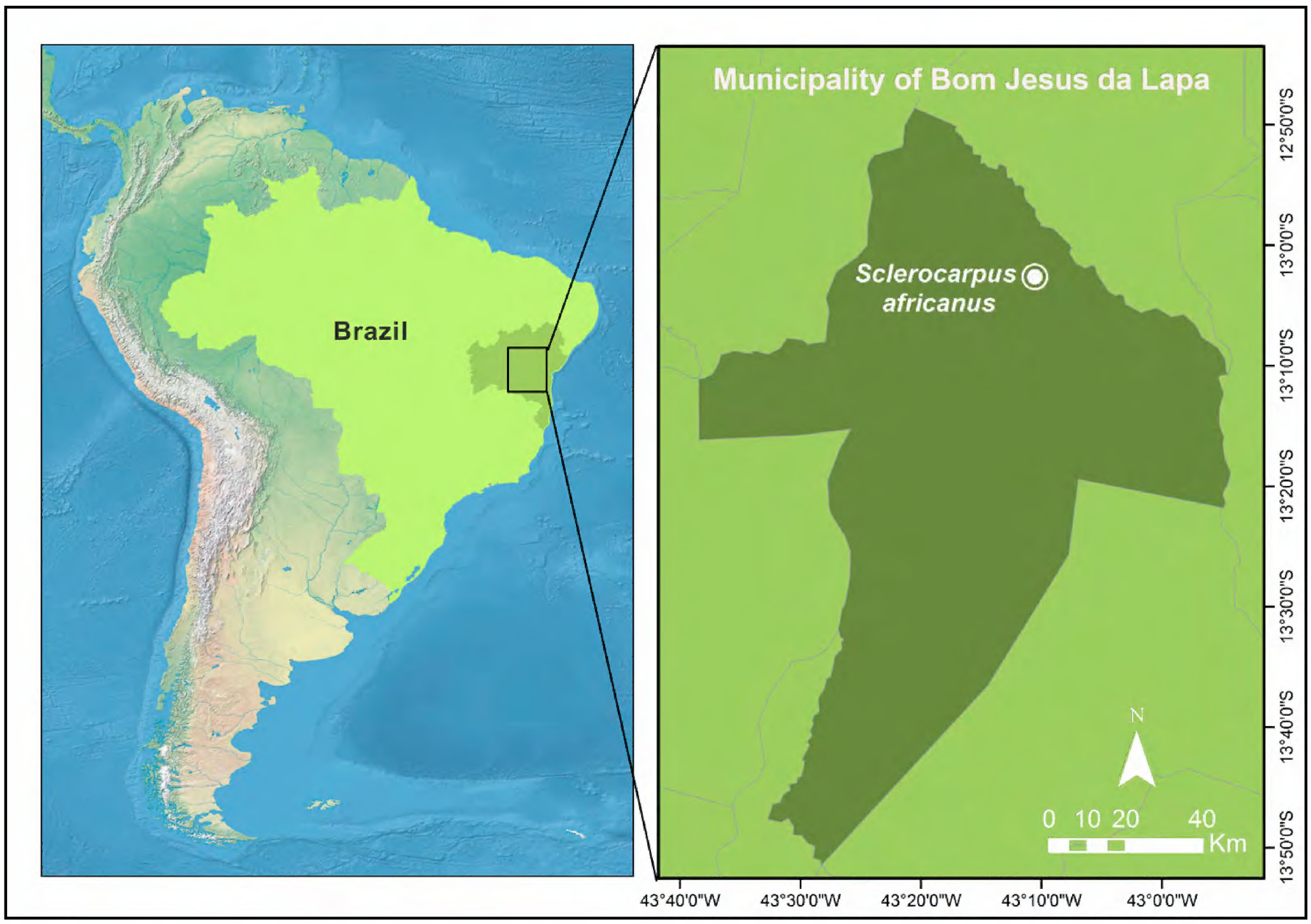


**Figure 1.** *Sclerocarpus africanus* collection, Municipality of Bom Jesus da Lapa, Bahia, Brazil.

entire, striated, pubescent, green. Flowers ca. 30, ray flowers 3–5, ca. 9 mm long, corolla 5 mm long (tube ca. 2 mm long), yellow-orange; disc flowers 9–10 mm long, corolla 4–5 mm long, tube ca. 2 mm long, lobes ca. 1 mm long, throat and lobes pubescent, yellow. Anthers ca. 1.2 mm long, blackish, connective appendage lanceolate, ca. 0.2 mm long, yellow, filaments yellow. Style ca. 4 mm long, yellow, style branches ca. 2 mm long, enlarged at the base. Cypsela 5–6 mm long, oblanceoloid, stipitate, striated, glabrous. Pappus absent.

**Specimen examined:** BRAZIL. Bahia: Bom Jesus da Lapa, ca. 28.8 Km NE from Bom Jesus da Lapa on Ibotirama road, 13°02′34″ S, 043°10′35″ W, 521 m above sea level, 8/II/2000, L.P. Queiroz et al. 5716 (ALCB, HRB, HUEFS).

*Sclerocarpus africanus* is native to Africa (Villaseñor and Hinojosa-Espinosa 2011), but has been introduced in other parts of the world, such as China (Yousheng and Hind 2011). In Brazil, the species is exotic, following the criteria defined by Moro et al. (2012).

*Sclerocarpus* species are primarily recognized by the phyllaries that can be isomorphic or dimorphic. *Sclerocarpus africanus* and *S. phyllocephalus* are the only species of the genus that phyllaries are dimorphic, ones similar in texture and shape (spatulate to ovate) to the leaves and other smaller and ovate. We have not found diagnostic features to distinguish the two species, which is in agreement with the position adopted by Villaseñor and Hinojosa-Espinosa (2011). These authors believe that new studies should be conducted to corroborate the identity between *S. africanus* and *S. phyllocephalus* S.F. Blake (Central America) due to its high morphological similarity. Thus, we have decided to consider the older name for this citation, *S. africanus*.

*Sclerocarpus africanus* has been used in folk medicine to treat venereal diseases in Nigeria (Ayo et al. 2014). Curiously, the species was collected in Bom Jesus da Lapa municipality (Figure 1), where there is the third largest Catholic festival in Brazil, which attracts thousands of faithful every year. Thus, we strongly believe the species was introduced in the region by its medicinal importance and it was disseminated during religious festival.

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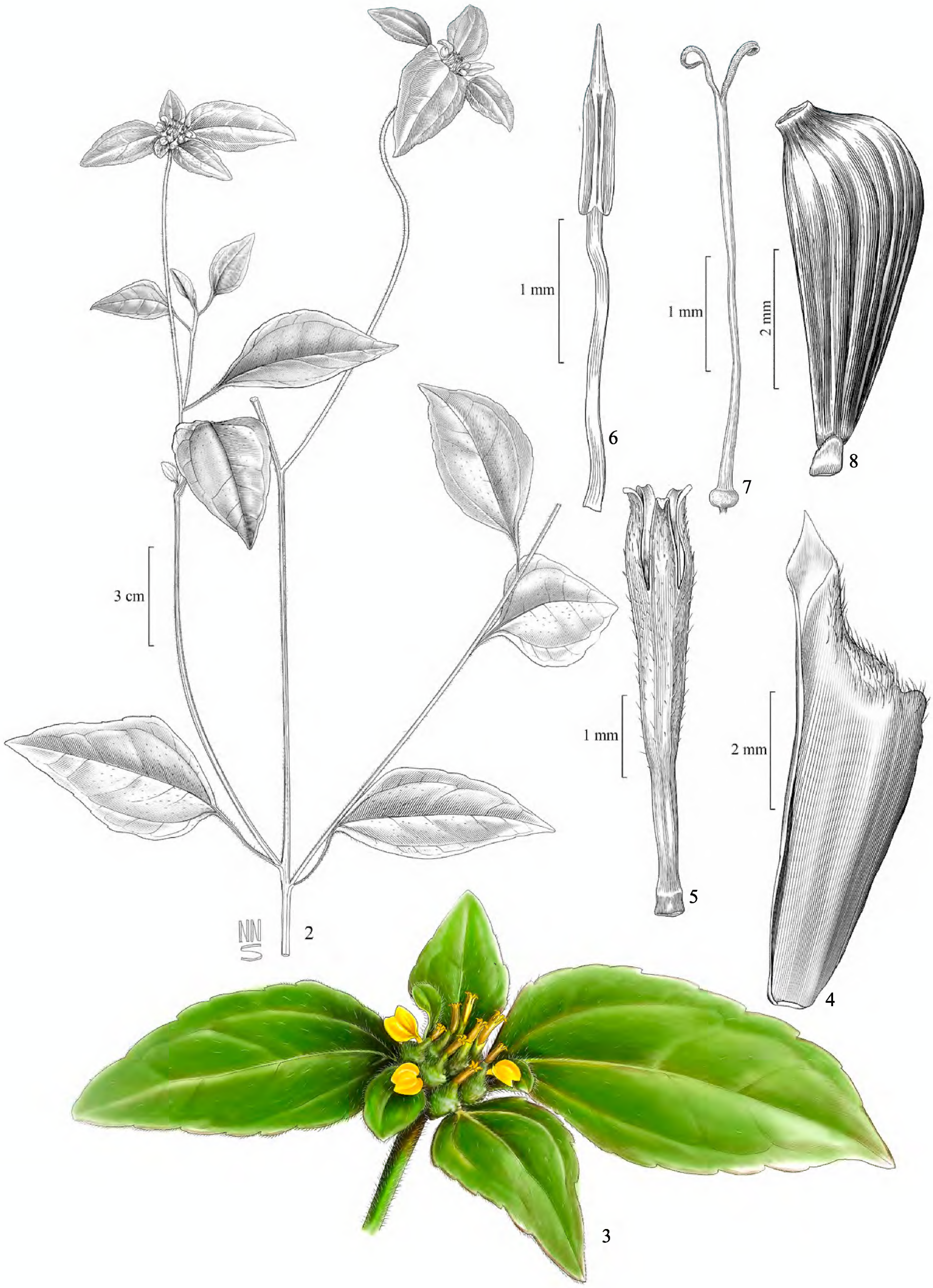


**Figures 2–8.** *Sclerocarpus africanus*. **2.** Habit. **3.** Terminal head. **4.** Cypsela wrapped by thickened pale. **5.** Corolla tubulose of disc flower. **6.** Stamen. **7.** style of disc flower. **8.** Cypsela striated. Drawn by Natanael Nascimento. Watercolor based on the photo of H. Pickering in zimbabweflora.co.zw.

(563541/2010-5), PRONEM (PNE 0020/2011), PROTAX FLORA DA BAHIA (562278/2010-9), SiB-br/CNPq (504208/2012-8) and INCT/HVFF (573883/2008-4).

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